Listing of the Claims

1-169. (canceled)

170. (previously presented) A method for producing an immune response, comprising

a) providing:

i) an animal; and ii) a composition comprising one of: 1) a hybrid particle comprising a polypeptide comprising a non-primate hepadnavirus core antigen and a heterologous antigen, and 2) an expression vector encoding said polypeptide; and

b) administering said composition to said animal under conditions such that an immune response is generated to said heterologous antigen.

171. (original) The method of claim 170, wherein said immune response comprises one or more of lymphocyte proliferative response, cytokine response and antibody response.

172. (original) The method of claim 171, wherein said antibody response comprises production of IgG antibodies.

173. (canceled)

174. (previously presented) The method of claim 170, wherein said non-primate hepadnavirus core antigen is a rodent hepadnavirus core antigen.

175. (previously presented) The method of claim 170, wherein said non-primate hepadnavirus core antigen is an avihepadnavirus core antigen.

176. (previously presented) A method for producing an immune response, comprising:

a) providing: i) an animal; and ii) a composition comprising one of: 1) a hybrid particle comprising a polypeptide comprising a heterologous antigen and a nonhuman primate hepadnavirus core antigen; and 2) an expression vector encoding said polypeptide; and

b) administering said composition to said animal under conditions such that an immune response is generated to said heterologous antigen.

177. (original) The method of claim 176, wherein said immune response comprises one or more of lymphocyte proliferative response, cytokine response and antibody response.

178. (original) The method of claim 177, wherein said antibody response comprises production of IgG antibodies.

179-187. (canceled)

188. (previously presented) The method of Claim 170, wherein said animal is a human having pre-existing antibodies to hepatitis B virus core antigen.

189. (previously presented) The method of Claim 176, wherein said animal is a human having pre-existing antibodies to hepatitis B virus core antigen.

190. (previously presented) The method of Claim 174, wherein said rodent hepadnavirus core antigen is selected from the group consisting of a woodchuck hepadnavirus core antigen, a ground squirrel hepadnavirus core antigen, and an arctic ground squirrel hepadnavirus core antigen.

191. (previously presented) The method of Claim 190, wherein said rodent hepadnavirus core antigen is a woodchuck hepadnavirus core antigen.

192. (previously presented) The method of Claim 190, wherein said rodent hepadnavirus core antigen is a ground squirrel hepadnavirus core antigen.

193. (previously presented) The method of Claim 190, wherein said rodent hepadnavirus core antigen is an arctic ground squirrel hepadnavirus core antigen.

194. (previously presented) The method of Claim 175, wherein said avihepadnavirus core antigen is selected from the group consisting of a duck hepadnavirus core antigen, a Ross' goose hepadnavirus core antigen, a hereon hepadnavirus core antigen, a Sheldgoose hepadnavirus core antigen, and a stork hepadnavirus core antigen.

195. (previously presented) The method of Claim 176, wherein said nonhuman primate hepadnavirus core antigen is selected from the group consisting of a chimpanzee hepatitis B virus core antigen, a gibbon hepatitis B virus core antigen, an orangutan hepatitis virus core antigen, and a woolly monkey hepatitis virus core antigen.

196. (previously presented) The method of Claim 170, wherein C-terminal sequence of the hepadnavirus core antigen is replaced by from 1 to 100 amino acids, and wherein said 1 to 100 amino acids does not consist of cysteine or of wild type C-terminal sequence of said hepadnavirus core antigen.

197. (previously presented) The method of Claim 176, wherein C-terminal sequence of the hepadnavirus core antigen is replaced by from 1 to 100 amino acids, and wherein said 1 to 100 amino acids does not consist of cysteine or of wild type C-terminal sequence of said hepadnavirus core antigen.